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NEWS 2 "Ask CAS" for self-help around the clock
NEWS 3 FEB 28 PATDPAFULL - New display fields provide for legal status data from INPADOC
NEWS 4 FEB 28 BABS - Current-awareness alerts (SDIs) available
NEWS 5 MAR 02 GBFULL: New full-text patent database on STN
NEWS 6 MAR 03 REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS 7 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 8 MAR 22 KOREAPAT now updated monthly; patent information enhanced
NEWS 9 MAR 22 Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS 10 MAR 22 PATDPASPC - New patent database available
NEWS 11 MAR 22 REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS 12 APR 04 EPFULL enhanced with additional patent information and new fields
NEWS 13 APR 04 EMBASE - Database reloaded and enhanced
NEWS 14 APR 18 New CAS Information Use Policies available online
NEWS 15 APR 25 Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAplus and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.
NEWS 16 APR 28 Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAplus
NEWS 17 MAY 23 GBFULL enhanced with patent drawing images
NEWS 18 MAY 23 REGISTRY has been enhanced with source information from CHEMCATS
NEWS 19 JUN 06 STN Patent Forums to be held in June 2005
NEWS 20 JUN 06 The Analysis Edition of STN Express with Discover! (Version 8.0 for Windows) now available
NEWS 21 JUN 13 RUSSIAPAT: New full-text patent database on STN
NEWS 22 JUN 13 FRFULL enhanced with patent drawing images
NEWS 23 JUN 20 MEDICONF to be removed from STN
NEWS 24 JUN 27 MARPAT displays enhanced with expanded G-group definitions and text labels
NEWS 25 JUL 01 MEDICONF removed from STN
NEWS 26 JUL 07 STN Patent Forums to be held in July 2005

NEWS EXPRESS JUNE 13 CURRENT WINDOWS VERSION IS V8.0, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 13 JUNE 2005

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FILE 'HOME' ENTERED AT 07:52:08 ON 11 JUL 2005

=> file reg
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                          ENTRY     SESSION
FULL ESTIMATED COST                                        0.21        0.21

FILE 'REGISTRY' ENTERED AT 07:52:18 ON 11 JUL 2005
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STRUCTURE FILE UPDATES:    10 JUL 2005  HIGHEST RN 854370-36-8
DICTIONARY FILE UPDATES:   10 JUL 2005  HIGHEST RN 854370-36-8

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*************************************************************
*                                                           *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005.  A new display format, IDERL, is now    *
* available and contains the CA role and document type information. *
*                                                           *
*************************************************************

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
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http://www.cas.org/ONLINE/DBSS/registryss.html

=>
Uploading C:\Program Files\Stnexp\Queries\10614556.str
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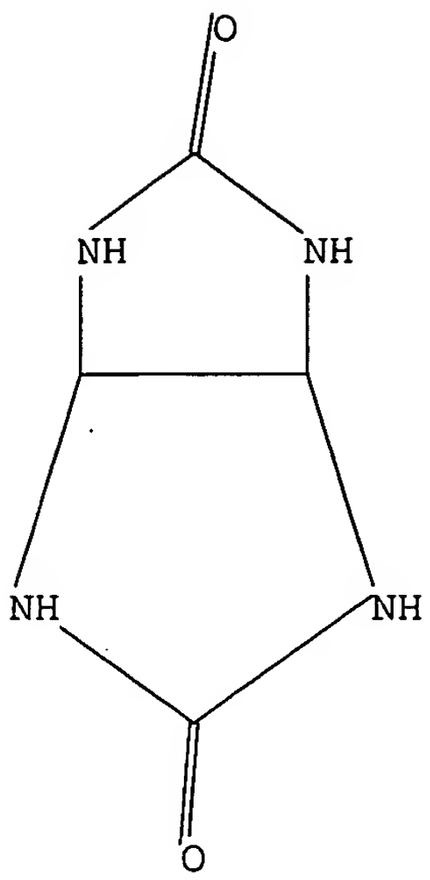
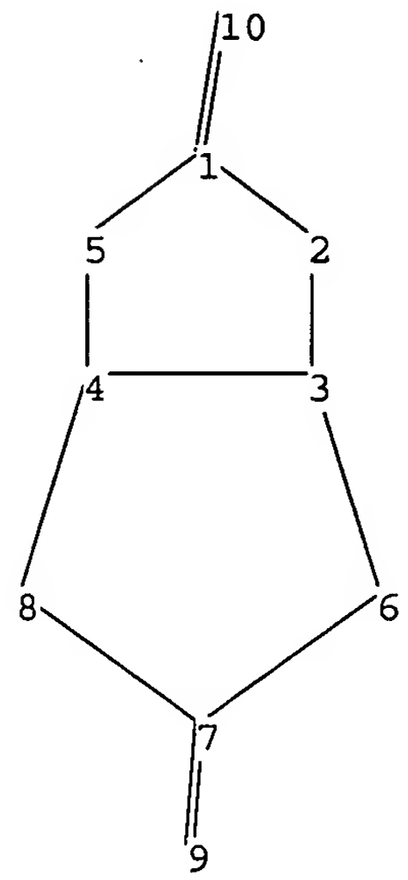


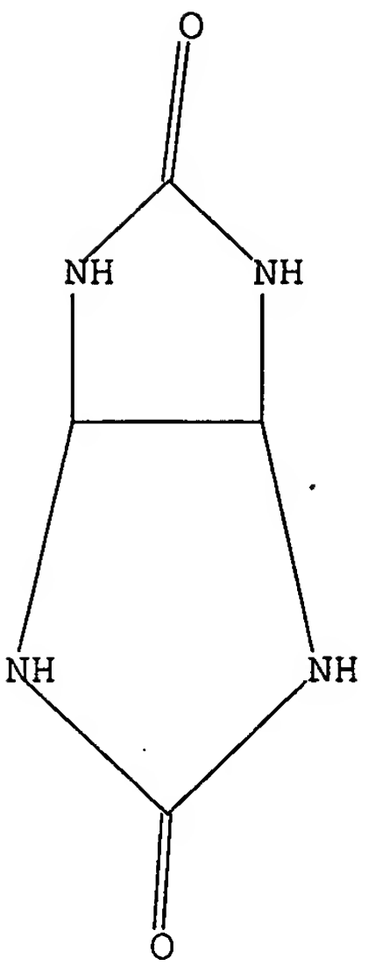


chain nodes :
9 10
ring nodes :
1 2 3 4 5 6 7 8
chain bonds :
1-10 7-9
ring bonds :
1-2 1-5 2-3 3-4 3-6 4-5 4-8 6-7 7-8
exact/norm bonds :
1-2 1-5 1-10 2-3 3-4 3-6 4-5 4-8 6-7 7-8 7-9

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:CLASS 10:CLASS

L1 STRUCTURE UPLOADED

=> d
L1 HAS NO ANSWERS
L1 STR



Structure attributes must be viewed using STN Express query preparation.

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=> s l1
SAMPLE SEARCH INITIATED 07:52:38 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -   1516 TO ITERATE

100.0% PROCESSED     1516 ITERATIONS                                 13 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE   **COMPLETE**
                        BATCH    **COMPLETE**
PROJECTED ITERATIONS:        27985 TO    32655
PROJECTED ANSWERS:              44 TO      476

L2            13 SEA SSS SAM L1

=> s l1 full
FULL SEARCH INITIATED 07:52:44 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -  31613 TO ITERATE

100.0% PROCESSED    31613 ITERATIONS                                186 ANSWERS
SEARCH TIME: 00.00.01

L3           186 SEA SSS FUL L1

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   161.33     161.54

FILE 'CAPLUS' ENTERED AT 07:52:49 ON 11 JUL 2005
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FILE COVERS 1907 - 11 Jul 2005 VOL 143 ISS 3
FILE LAST UPDATED: 10 Jul 2005 (20050710/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s l3
L4          500 L3

=> s l3 and glyoxal
            500 L3
          11212 GLYOXAL
            335 GLYOXALS
          11314 GLYOXAL
                  (GLYOXAL OR GLYOXALS)
L5           40 L3 AND GLYOXAL

=> d ibib abs hitstr tot
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L5 ANSWER 1 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:162241 CAPLUS
DOCUMENT NUMBER: 140:219485
TITLE: Crosslinkable resin-containing powders for use with aqueous binders for 3D printing
INVENTOR(S): Leyden, Richard Noel; Cleary, Timothy Marvin; Li, John Xiaosan; Obuchowicz, Jacek; Peace, Richard J.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

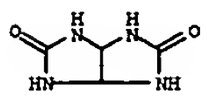
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004038009	A1	20040226	US 2002-225830	20020821
WO 2004018185	A1	20040304	WO 2003-GB3532	20030813

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-225830 A 20020821
AB A powder system for use in a three-dimensional printer with an aqueous binder comprises a water-soluble crosslinkable agent. Preferably, the crosslinkable agent is an aminoplast, a phenolic resin, or a mixed aminoplast-phenolic resin. At least some of the crosslinkable agent may be present in the system as a coating on a filler material selected from glass spheres, flakes or fibers. The powder system may comprise a strengthening component which melts and flows when heated, and resolidifies or cures. The powder systems of the invention are used for three-dimensional printing of articles having enhanced strength and durability. In another aspect, a powder/binder system for three-dimensional printing comprises a redox couple to generate an acid that catalyzes crosslinking of the crosslinkable agent. As a result, the strength of the 3D article builds up at an enhanced rate. The oxidant and the reductant of the redox couple may be present together in the powder, or sep. in powder or the binder.
IT 36833-16-6, Formaldehyde-glycoluril copolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(crosslinkable resin-containing powders for use with aqueous binders for 3D printing)
RN 36833-16-6 CAPLUS
CN Formaldehyde, polymer with tetrahydroimidazo[4,5-d]imidazole-2,5(1H,3H)-dione (9CI) (CA INDEX NAME)

L5 ANSWER 1 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
CM 1

CRN 496-46-8
CMF C4 H6 N4 O2



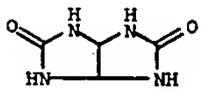
CM 2

CRN 50-00-0
CMF C H2 O

L5 ANSWER 2 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:17420 CAPLUS
DOCUMENT NUMBER: 140:59641
TITLE: Process for the continuous preparation of glycoluril from glyoxal and urea in the presence of mineral acids
INVENTOR(S): Franke, Dirk; Horchler, Klaus; Czikkely, Vilmos
PATENT ASSIGNEE(S): Compo Gesellschaft m.b.H. & Co. K.-G., Germany
SOURCE: Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1378511	A1	20040107	EP 2003-14035	20030620
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10230490	A1	20040122	DE 2002-10230490	20020706
DE 10230490	B4	20040708		
JP 2004075679	A2	20040311	JP 2003-205062	20030627
NZ 526791	A	20041126	NZ 2003-526791	20030701
CN 1472198	A	20040204	CN 2003-148979	20030703
BR 2003002178	A	20040908	BR 2003-2178	20030703
US 2004054191	A1	20040318	US 2003-614556	20030707

PRIORITY APPLN. INFO.: DE 2002-10230490 A 20020706
AB Glycoluril was prepared by reacting glyoxal with urea in the presence of mineral acids in >1 reactor provided with a mixing device, whereby glyoxal, urea, and mineral acid were continuously fed into the reactor and a suspension of acetylurea in mother liquor was discharged from the reactor followed by mech. separating acetylurea from the mother liquor and recycling mother liquor into the reactor. Thus, glyoxal, urea, and H2SO4 were continuously fed into a cascade reactor containing 2 stirred reactors at 65° and 200 mbar to give 97% glycoluril.
IT 496-46-8P, Glycoluril
RL: AGR (Agricultural use); BUU (Biological use, unclassified); IMF (Industrial manufacture); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(process for continuous preparation of glycoluril from glyoxal and urea in presence of mineral acids)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

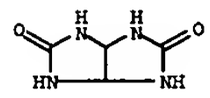


REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:254878 CAPLUS
DOCUMENT NUMBER: 134:280255
TITLE: Manufacturing of glycoluril
INVENTOR(S): Sudo, Nobuyuki; Inoue, Hatsuo; Iwane, Keiko; Takamatsu, Koji
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001097974	A2	20010410	JP 1999-275526	19990929

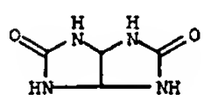
PRIORITY APPLN. INFO.: JP 1999-275526 19990929
AB In the manufacture of glycoluril, glyoxal is added to an aqueous solution of urea (or an aqueous solution of urea and glyoxal) containing 10 to 50 weight% urea in the presence of an acid catalyst; the mol ratio of the reactants (urea/glyoxal) is 2.01 to 2.3; the glycoluril precipitate is collected by filtration. Glycoluril is a long acting fertilizer (no data). This manufacture method is economical.
IT 496-46-8P, Glycoluril
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(manufacture of glycoluril)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 4 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:733052 CAPLUS
DOCUMENT NUMBER: 133:281786
TITLE: Continuous production of glycoluril
INVENTOR(S): Sudo, Nobuyuki; Takamatsu, Koji; Morikawa, Hiroshi; Inoue, Hatsuo
PATENT ASSIGNEE(S): Mitsui Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000290281	A2	20001017	JP 1999-99637	19990407
PRIORITY APPLN. INFO.:			JP 1999-99637	19990407

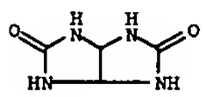
AB Glycoluril, useful as slow release fertilizer, was prepared continuously by treatment of a suspension of glycoluril with urea (I), aqueous glyoxal (II), and acid catalyst with the mol ratio of I/II = 2.01-2.30. Thus, treating continuously an aqueous suspension of glycoluril with I, aqueous II, and 35% HCl gave 98.7% (based on glyoxal) glycoluril.
IT 496-46-8P
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(continuous production of glycoluril)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 5 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:674095 CAPLUS
DOCUMENT NUMBER: 133:238003
TITLE: Preparation of glycoluril from urea and glyoxal
INVENTOR(S): Sudo, Nobuyuki; Inoue, Hatsuo
PATENT ASSIGNEE(S): Mitsui Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000264887	A2	20000926	JP 1999-71293	19990317
PRIORITY APPLN. INFO.:			JP 1999-71293	19990317

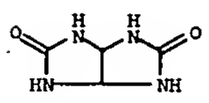
AB Glycoluril, known as a slow-release fertilizer, is prepared by dropwise addition of aqueous glyoxal (I) solution to aqueous solution containing I and 50 weight% to saturated concentration of urea, in the presence of acid catalyst, and reacting urea with I at urea/I 2.01-2.3 mol ratio and 50-100°. Aqueous solution of 40% I was dropwise added over 1 h to aqueous solution containing 40% I (prepared by oxidation of ethylene glycol with mol. O), urea, and HCl at ≥85° and the mixture was left at ≥85° for 3 h to give 93.4% glycoluril.
IT 496-46-8P, Glycoluril
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of glycoluril from urea and glyoxal)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 6 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:426857 CAPLUS
DOCUMENT NUMBER: 133:58231
TITLE: Slow-release glycoluril fertilizer and its manufacture from glyoxal and urea
INVENTOR(S): Kato, Fujio; Inoue, Hatsuo; Sudo, Nobuyuki; Takahashi, Shigeru; Ishioka, Tadashi; Kaizuka, Takaki
PATENT ASSIGNEE(S): Mitsui Petrochemical Industries, Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000178090	A2	20000627	JP 1998-352861	19981211
PRIORITY APPLN. INFO.:			JP 1998-352861	19981211

AB The fertilizer contains the reaction products prepared by treating glyoxal with urea in the presence of acids and neutralizing the reaction mixture An aqueous glyoxal solution was added to a mixture of H2O, urea, and HCl in some portions at ≤80° over 1 h and the reaction mixture was let stand at 80° for 2 h, and then treated with an aqueous. NH3 solution to give a product containing 25.9% glycoluril. A part of the reaction product was mixed with xanthan gum to give a flowable. Fertilizer experiment of the flowable in cultivation of tendergreen was also shown.
IT 496-46-8, Glycoluril
RL: RCT (Reactant); RACT (Reactant or reagent)
(manufacture of slow-release glycoluril fertilizer by acid-catalyzed reaction of glyoxal and urea)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

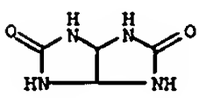


L5 ANSWER 7 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2000:65964 CAPLUS
DOCUMENT NUMBER: 132:195994
TITLE: Urea-formaldehyde-glyoxal oligomers for wood particleboard production
AUTHOR(S): Balakin, V. M.; Zavarnisina, Yu. V.; Litvinets, Yu. I.; Arefiev, E. O.; Shevtschuk, S. A.
CORPORATE SOURCE: The Ural State Forest Engineering Acad., Yekaterinburg, Russia
SOURCE: Zbornik Referatov - Sympozium "Pokroky vo Vyrobe a Pouziti Lepidiel v Drevopriemysle" (1999), 14th, 103-105
CODEN: ZRSDEN
PUBLISHER: Technicka Univerzita
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Since the main cause of toxicity from urea-HCHO resins in particleboards is the emission of free HCHO, replacement of part of the HCHO in the resin by less toxic aldehydes, e.g. glyoxal (I), should help solve the problem. Studies were carried out to obtain low-toxicity HCHO-glyoxal-urea oligomers with improved exploitational properties for wood particleboard manufacture The synthesis was carried out by a 3-stage method in which I was introduced in the first stage. Besides I, glycoluril (II) was also used as a modifier. Investigation results showed that application of either I or II to the resins gave improved exploitation properties and lowered HCHO content.
IT 260272-05-7, Formaldehyde-urea-glycoluril resin
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(oligomeric; modified urea-formaldehyde oligomers as low-toxicity adhesives for particleboards)
RN 260272-05-7 CAPLUS
CN Urea, polymer with formaldehyde and tetrahydroimidazo[4,5-d]imidazole-2,5(1H,3H)-dione (9CI) (CA INDEX NAME)

CM 1

CRN 496-46-8
CMF C4 H6 N4 O2



CM 2

CRN 57-13-6
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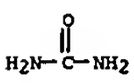


CM 3

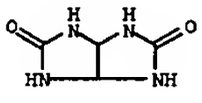
L5 ANSWER 7 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

CRN 50-00-0
CMF C H2 O

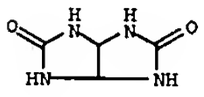
L5 ANSWER 8 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:385450 CAPLUS
DOCUMENT NUMBER: 127:5091
TITLE: Preparation of 2,4,6,8-tetraazabicyclo[3.3.0]octane-3,7-dione
INVENTOR(S): Sheludyakov, Oleg A.; Yagovkin, Aleksandr Yu.; Bakibaev, Abdigali A.; Filimonov, Viktor D.; Sologub, Anatolij P.; Bychkov, Ivan A.; Novozheeva, Tatyana P.
PATENT ASSIGNEE(S): Tovarishchestvo S Ogranichennoj Otvetstvennostyu "ost-Vest", USSR
SOURCE: Russ. From: Izobreteniya 1996, (20), 207. CODEN: RUXXE7
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2063970	C1	19960720	RU 1993-32710	19930623

PRIORITY APPLN. INFO.: RU 1993-32710 19930623
AB Title only translated.
IT **496-46-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of 2,4,6,8-tetraazabicyclo[3.3.0]octane-3,7-dione)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 9 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:300581 CAPLUS
DOCUMENT NUMBER: 126:295252
TITLE: Synthesis and properties of 1,4-dinitro-3,6-bis(trinitroethyl)glycoluril
AUTHOR(S): Fang, Yingao; Wu, Guohua
CORPORATE SOURCE: Xi'an Modern Chemistry Research Institute, Xi'an, 710065, Peop. Rep. China
SOURCE: Hanneng Cailiao (1997), 5(1), 9-14 CODEN: HACAFQ; ISSN: 1006-9941
PUBLISHER: Hanneng Cailiao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB By using urea, **glyoxal**, formaldehyde, nitroform, nitric acid, and sulfuric acid as basic materials, the title compound was prepared via cyclization, hydroxymethylation, introduction of the trinitromethyl group, and nitration. Its physicochem. and detonation properties were determined The detonation velocity at d. of 1.95 g/cm3 was 9037 m/s. The title compound possesses an acceptable thermal and hydrolytic stability.
IT **496-46-8P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydroxymethylation of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



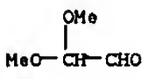
L5 ANSWER 10 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:241909 CAPLUS
DOCUMENT NUMBER: 124:262639
TITLE: Aminoplasts as crosslinking agents for cellulose
INVENTOR(S): Wilhelm, Didier; Blanc, Alain; Floyd, William C.
PATENT ASSIGNEE(S): Societe Francaise Hoechst, Fr.
SOURCE: Eur. Pat. Appl., 12 pp. CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 698627	A1	19960228	EP 1995-401780	19950727
EP 698627	B1	19980304		
R: CH, DE, ES, FR, GB, IT, LI				
FR 2723742	A1	19960223	FR 1994-10186	19940822
FR 2723742	B1	19961115		
ES 2113161	T3	19980416	ES 1995-401780	19950727
JP 08067729	A2	19960312	JP 1995-233286	19950818
CA 2156573	AA	19960223	CA 1995-2156573	19950821
US 5665851	A	19970909	US 1995-517568	19950821

PRIORITY APPLN. INFO.: FR 1994-10186 A 19940822
AB The title resins are prepared from melamine and/or glycouril, the aldehydes RCHO (R = dialkoxymethyl; 1,3-dioxan-2-yl or substituted derivs.), and, optionally, **glyoxal**. Refluxing 1.3 mol melamine with 3.9 mol (BuO)2CHCHO in aqueous iso-PrOH at pH 9 for 4 h gave 850 g mixture of N-(2,2-dibutoxy-1-hydroxyethyl)melamine and the corresponding di- and trisubstituted derivs.
IT **175613-79-3P**
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(aminoplasts as crosslinking agents for cellulose)
RN 175613-79-3 CAPLUS
CN Acetaldehyde, dimethoxy-, polymer with tetrahydroimidazo[4,5-d]imidazole-2,5(1H,3H)-dione (9CI) (CA INDEX NAME)

CM 1

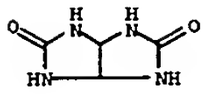
CRN 51673-84-8
CMF C4 H8 O3



CM 2

CRN 496-46-8
CMF C4 H6 N4 O2

L5 ANSWER 10 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



L5 ANSWER 11 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN

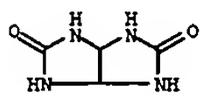
ACCESSION NUMBER: 1994:417060 CAPLUS
DOCUMENT NUMBER: 121:17060
TITLE: Removal of halogenated hydrocarbons from fluids such as air and water
INVENTOR(S): Buchanan, Hans Juergen; Fink, Harald; Schollmeyer, Eckhard
PATENT ASSIGNEE(S): Deutsches Textilforschungszentrum Nord-West eV, Germany
SOURCE: Ger. Offen., 13 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4142207	A1	19930624	DE 1991-4142207	19911220
PRIORITY APPLN. INFO.:			DE 1991-4142207	19911220

AB Halohydrocarbons, e.g., dry cleaning solvents, are removed from fluids, e.g., wastewaters using a cyclic ring compound formed by reaction of an aldehyde with an aromatic hydroxy compound and/or by reaction of an aldehyde with a urea compound Suitable aldehydes include formaldehyde; suitable hydroxy compds. include chromotropic acid, veratrole, benzodioxol, phenol, substituted phenol, naphthols, substituted naphthols, pyrocatechol, resorcin, and/or pyrogallol. The cyclic ring compound may be immobilized on a water-insol. matrix such as alumina, silica gel, or kieselguhr.

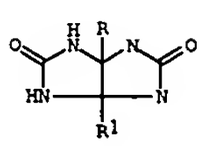
IT 496-46-8, Glycoluril
RL: PROC (Process)
(reactant; removal of halohydrocarbons from wastewaters and waste gases by aldehyde reaction products with hydroxy compds. or urea compds.)

RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

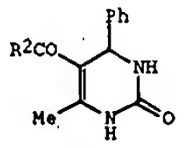


L5 ANSWER 12 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:134371 CAPLUS
DOCUMENT NUMBER: 120:134371
TITLE: Amide- and urea-based synthetic anticonvulsants, antihypoxants and inductors of the hepatic monooxygenase system. IX. Synthesis and search for cytochrome P-450-dependent monooxygenase inductors among carbamide-containing heterocycles
AUTHOR(S): Bakibayev, A. A.; Akmedzhanov, R. R.; Yagovkin, A. Yu.; Novozheyeva, T. P.; Filimov, V. D.; Saratikov, A. S.
CORPORATE SOURCE: Tomsk. Politekh. Univ., Tomsk, Russia
SOURCE: Khimiko-Farmatsevticheskii Zhurnal (1993), 27(6), 29-33
CODEN: KHFZAN; ISSN: 0023-1134
DOCUMENT TYPE: Journal
LANGUAGE: Russian
GI



I



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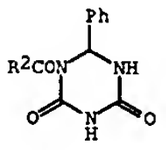
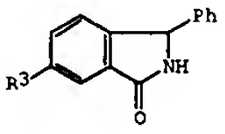


III

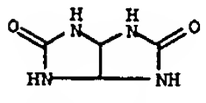


IV

AB The title compds., e.g. imidazoimidazolediones I (R =H, R1 = H, Ph; R = R1 = Me, Ph), pyrimidinones II (R2 = Me, Et), pyrimidinediones III, and isoindolinones IV (R3 = H, Cl), by reactions of a variety of carbonyl compds. with ureas and benzylidenebisurea and their use in prolongation of hexobarbital-induced sleep was determined Compds. containing the common structural
element PhCH2NHCOH were the most active.

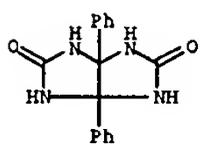
IT 496-46-8P 5157-15-3P 28115-25-5P
153001-07-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and hexobarbital-induced sleep extension by)

RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

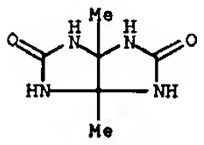


L5 ANSWER 12 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

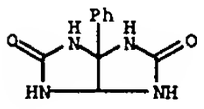
RN 5157-15-3 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-3a,6a-diphenyl- (9CI) (CA INDEX NAME)



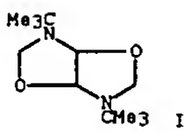
RN 28115-25-5 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-3a,6a-dimethyl- (9CI) (CA INDEX NAME)



RN 153001-07-1 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-3a-phenyl- (9CI) (CA INDEX NAME)



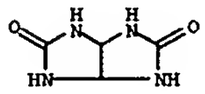
L5 ANSWER 13 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1992:511502 CAPLUS
DOCUMENT NUMBER: 117:111502
TITLE: A new heterocyclic system: 1,5-di-tert-butyl-1,5-diaza-3,7-dioxabicyclo[3.3.0]octane
AUTHOR(S): Kovalenko, A. L.; Serov, Yu. V.; Tselinskii, I. V.
CORPORATE SOURCE: VNI Tekhnol. Inst. Antibiot. Ferment., St. Petersburg, Russia
SOURCE: Zhurnal Obshchei Khimii (1991), 61(12), 2778-80
CODEN: ZOKHA4; ISSN: 0044-460X
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 117:111502
GI



I

AB Treating O2NNHCH(NHNO2)CH(NHNO2)NHNO2 with Me3CNH2 and HCHO in H2O at pH 3-6 gave 17% of the unexpected diazadioxabicyclo[3.3.0]octane I.
IT 496-46-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and nitration of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

L5 ANSWER 14 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1991:634721 CAPLUS
DOCUMENT NUMBER: 115:234721
TITLE: Synthesis and characterization of glycoluril
AUTHOR(S): Xia, Yuzheng; Jiao, Shuke
CORPORATE SOURCE: Dep. Appl. Chem., Beijing Inst. Chem. Technol., Beijing, Peop. Rep. China
SOURCE: Beijing Huagong Xueyuan Xuebao, Ziran Kexueban (1990), 17(3), 73-6
CODEN: BHXKE7; ISSN: 1000-5668
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Glycouril (I), useful as a crosslinking agent for acrylic coatings, was prepared by reacting glyoxal (II) with urea. The yield of I was 71.4% under the reaction conditions of pH 1-2, feeding rate of I into the aqueous urea solution .apprx.1 mL/min, urea-II molar ratio 2.5, temperature 75-80°, and reaction time 4 h in the presence of a H2SO4 catalyst. The product was characterized by IR and DSC.
IT 496-46-8P, Glycoluril
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, as crosslinking agent for acrylic coatings)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



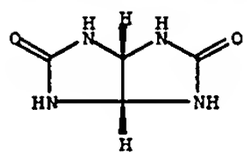
L5 ANSWER 15 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1990:611142 CAPLUS
DOCUMENT NUMBER: 113:211142
TITLE: Bleaching activators as acylating agents. Kinetics of the acetylation of piperidine by some bleaching activators
AUTHOR(S): Hofmann, Joerg; Just, Gerhard; Moya, Dally; Ostermann, Sylvio; Pritzkow, Wilhelm; Visothea, Mok Po
CORPORATE SOURCE: Carl Schorlemmer Tech. Univ., Leuna-Merseburg, DDR-4200, Ger. Dem. Rep.
SOURCE: Journal fuer Praktische Chemie (Leipzig) (1990), 332(2), 176-80
CODEN: JPCEAO; ISSN: 0021-8383
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 113:211142
AB The bleaching activators 1,5-diacetyl-2,4-dioxohexahydro-1,3,5-triazine (DADHT), tetraacetylethylenediamine (TAED), tetraacetylglycolurile (TAGU), N,N'-diacetyl-N,N'-dimethylurea (DDU), and pentaacetyl glucose (PAG) are efficient acetylating agents which convert primary and secondary amines into their N-acetyl derivs. The rates of the reactions of the bleaching activators mentioned with piperidine were determined at 20-90° in dioxane. The kinetics consts. can be regarded as rough measures of the activity of the bleaching activators.
IT 496-46-8P, Glycolurile
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and acetylation of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

L5 ANSWER 16 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1989:8109 CAPLUS
DOCUMENT NUMBER: 110:8109
TITLE: Isolation and x-ray structure of the intermediate dihydroxyimidazolidine (DHI) in the synthesis of glycoluril from glyoxal and urea
AUTHOR(S): Grillon, E.; Gallo, R.; Pierrot, M.; Boileau, J.; Wimmer, E.
CORPORATE SOURCE: Ec. Sup. d'Ing. Petroleochim. Synth. Org. Ind., Marseille, 13013, Fr.
SOURCE: Tetrahedron Letters (1988), 29(9), 1015-16
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 110:8109
GI

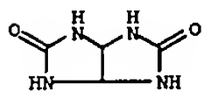
I II

AB Reaction of urea with glyoxal at 90° and pH 6.5-7.5 gave trans-dihydroxyimidazolidinone I. The mol. structure of I was determined by x-ray crystal structure anal. Cyclocondensation of I with RNHCONHR1 (R = R1 = H, Me; R = H, R1 = Me, Ph, PhCH2) gave 47-82% glycolurils II, which are not available from unsubstituted glycouril.
IT 117911-83-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 117911-83-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-, cis- (9CI) (CA INDEX NAME)

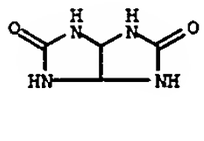
Relative stereochemistry.



L5 ANSWER 17 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1988:94060 CAPLUS
DOCUMENT NUMBER: 108:94060
TITLE: Optimization of technological conditions for hydroxymethylation of mixtures of urea and some of its cyclic derivatives
AUTHOR(S): Kunchev, E.; Neznakomova, M.; Stoyanov, S.
CORPORATE SOURCE: Bulg.
SOURCE: Godishnik na Visshiya Khimikotekhnologicheski Institut, Sofiya (1985), Volume Date 1984, 28(2), 88-95
CODEN: GVKIAH; ISSN: 0489-6211
DOCUMENT TYPE: Journal
LANGUAGE: Bulgarian
OTHER SOURCE(S): CASREACT 108:94060
AB Condensation reaction of urea with glyoxal gives mixts. containing 4,5-dihydroxyimidazolidin-2-one (I), glyoxal diureide (II) and urea, all of which are hydroxymethylated with HCHO by the same mechanism. A math. model is derived to describe the hydroxymethylation of these mixts. at 40-80° and pH 6-10. Optimum results were obtained with approx. 1:1 I-II containing 5-15% urea at 60° and pH 10.
IT 496-46-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydroxymethylation of, simulation and optimization of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 18 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1988:36719 CAPLUS
DOCUMENT NUMBER: 108:36719
TITLE: Glycoluril as a slow release nitrogen fertilizer
AUTHOR(S): Shimizu, Toshio
CORPORATE SOURCE: Tech. Res. Lab., Asahi Chem. Ind., Shizuoka, 416, Japan
SOURCE: Soil Science and Plant Nutrition (Tokyo, Japan) (1987), 33(2), 291-8
CODEN: SSPNAW; ISSN: 0038-0768
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To develop a new slow release N fertilizer, the characteristics and synthesis of glycoluril (tetrahydroimidazo[4,5-d]imidazole-2,5(1H,3H)-dione) were examined Phys. tests, mineralization tests, phytotoxicity and bacterial growth tests were carried out with the compound Glycoluril was mineralized after a lag period under aerobic conditions and its fertilization effect lasted for a long time. At a heavy dose glycoluril was not toxic to Brassica seedlings and it was not toxic to fish even when used in a saturated aqueous solution In the reaction of urea with glyoxal, a high yield of glycoluril was obtained by decreasing the concentration of glyoxal in the solution Under the optimum reaction conditions, a yield of glycoluril as high as about 90% was obtained, compared with about 60% by the conventional method.
IT 496-46-8, Glycoluril
RL: BIOL (Biological study)
(as slow-release nitrogen fertilizer)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



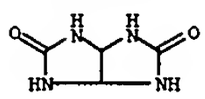
L5 ANSWER 19 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN.
ACCESSION NUMBER: 1985:80669 CAPLUS
DOCUMENT NUMBER: 102:80669
TITLE: Paper that contains chemically substituted cellulose
INVENTOR(S): Eklund, Dan; Erkkila, Jukka; Ingman, Matti; Lassus, Anders; Peltonen, Kauko; Saarinen, Kari
PATENT ASSIGNEE(S): Lannen Tehtaat Oy, Finland
SOURCE: PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8404553	A1	19841122	WO 1984-FI40	19840521
W: AT, AU, BR, DE, FI, GB, JP, NL, NO, SE, SU, US				
FI 8301767	A	19841120	FI 1983-1767	19830519
ES 532545	A1	19860601	ES 1984-532545	19840517
FR 2546197	A1	19841123	FR 1984-7733	19840518
FR 2546197	B1	19871113		
CA 1247307	A1	19881227	CA 1984-454769	19840518
AU 8429605	A1	19841204	AU 1984-29605	19840521
AU 571235	B2	19880414		
BR 8406599	A	19850312	BR 1984-6599	19840521
NL 8420130	A	19850401	NL 1984-20130	19840521
DE 3490237	T	19850530	DE 1984-3490237	19840521
GB 2149826	A1	19850619	GB 1984-30283	19840521
GB 2149826	B2	19861001		
JP 60501317	T2	19850815	JP 1984-502012	19840521
US 4610761	A	19860909	US 1984-691564	19841219
SE 8500195	A	19850116	SE 1985-195	19850116
NO 8500192	A	19850117	NO 1985-192	19850117
NO 163108	B	19891227		
NO 163108	C	19900404		
FI 8500252	A	19850118	FI 1985-252	19850118
FI 71802	B	19861031		
FI 71802	C	19870209		
SU 1429945	A3	19881007	SU 1985-3843341	19850118

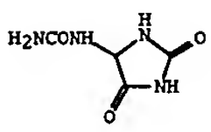
PRIORITY APPLN. INFO.: FI 1983-1767 A 19830519
WO 1984-FI40 A 19840521

AB Treatment of paper with N-methylol compds. and drying at 130-200° gave products with good rot-proof and wet strength properties. Thus, paper was impregnated with a solution of N-(hydroxymethyl)dihydroxyethyleneur ea (I) [20662-57-1], from urea-glyoxal-H2CO mixture (1:1:1), containing MgCl2.6H2O (20% of I) and dried for 10 min at .apprx.150° to give a specimen containing 20.65% I with 84.0 and 60.3 N dry and wet tensile strength after fermentation with cellulose, resp.
IT 83433-99-2
RL: USES (Uses)
(impregnation with magnesium chloride and, of paper, rot-proofing in relation to)
RN 83433-99-2 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydrobis(hydroxymethyl)- (9CI) (CA INDEX NAME)

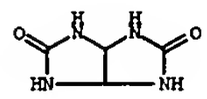
L5 ANSWER 19 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



L5 ANSWER 20 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1984:145058 CAPLUS
DOCUMENT NUMBER: 100:145058
TITLE: Glycoluril identification in allantoin
AUTHOR(S): Baloniak, Sylwester; Blaszczak, Henryka
CORPORATE SOURCE: Inst. Chem., Sch. Med., Poznan, 60-780, Pol.
SOURCE: Acta Poloniae Pharmaceutica (1983), 40(2), 249-50
CODEN: APPHAX; ISSN: 0001-6837
DOCUMENT TYPE: Journal
LANGUAGE: Polish
OTHER SOURCE(S): CASREACT 100:145058
GI

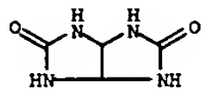


I

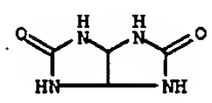


II

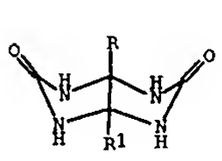
AB Tech. grade allantoin (I) [97-59-6] contained 10-70% impurities insol. in aqueous Na2CO3. The main purity was glycoluril (II) [496-46-8] which is formed from glyoxal and urea when oxidation of glyoxal to glyoxylic acid was not complete. II was addnl. identified as the tetraacetyl derivative [10543-60-9].
IT 496-46-8
RL: ANT (Analyte); ANST (Analytical study)
(determination of, as impurity in allantoin)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



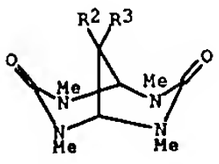
L5 ANSWER 21 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1981:621187 CAPLUS
DOCUMENT NUMBER: 95:221187
TITLE: Study of the reaction between urea and glyoxal as an intermediate stage for obtaining products for crosslinking. II. Qualitative chromatographic separation of the reaction products
AUTHOR(S): Kantschev, E.; Nesnakomova, M.
CORPORATE SOURCE: Chem. Technol. Hochsch., Sofia, 1156, Bulg.
SOURCE: Textilveredlung (1981), 16(10), 414-17
CODEN: TXLVAE; ISSN: 0040-5310
DOCUMENT TYPE: Journal
LANGUAGE: German
AB The reaction between urea [57-13-6] and glyoxal [107-22-2] yields, in addition to the main product 4,5-dihydroxy-2-imidazolidinone [3720-97-6], a number of nitrogeneous compds. which after hydroxymethylation influence the crosslinking by the main product. The separation and identification of these compds. was investigated for better control of the reaction and to give products with desirable properties. Silica gel plates were used with selected developing agents and quickly separated urea, glyoxal, diurene [396-01-0], the main products, etc. The effect of the pH value on the composition of the mixture and the course of the reaction could be controlled. The use of suitable conditions leads to spots on the plate which could be determined quant.
IT 496-46-8
RL: USES (Uses)
(separation and determination of, in glyoxal-urea reaction mixts., by thin-layer chromatog.)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 22 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1979:540825 CAPLUS
DOCUMENT NUMBER: 91:140825
TITLE: Study of the chemistry of bicyclic bisureas. 1. Synthesis of 2,4,6,8-tetraazabicyclo[3.3.0]octane-3,7-diones and 2,4,6,8-tetraazabicyclo[3.3.1]nonane-3,7-diones by the reaction of ureas with α- and β-dicarbonyl compounds
AUTHOR(S): Eres'ko, V. A.; Epishina, L. V.; Lebedev, O. V.; Khmel'nitskii, L. I.; Novikov, S. S.; Povstyanoi, M. V.; Kulik, A. F.
CORPORATE SOURCE: Inst. Org. Khim. im. Zelinskogo, Moscow, USSR
SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1979), (5), 1073-6
CODEN: IASKA6; ISSN: 0002-3353
DOCUMENT TYPE: Journal
LANGUAGE: Russian
OTHER SOURCE(S): CASREACT 91:140825
GI

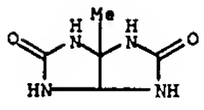


I



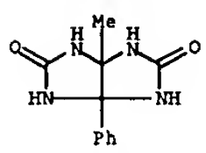
II

AB Tetraazabicyclooctanediones I (R, R1 = H, Me; Me, Ph; Me, Pr) were prepared by acid catalyzed cyclocondensation of urea and RCOCR1:NOH. Tetraazabicyclononanediones II (R2, R3 = H, H; Me, Me; H, Br) were prepared by cyclocondensation of MeNHCONHMe with R2R3C[CH(OEt)2]2.
IT 3720-96-5P 28115-24-4P 71443-52-2P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 3720-96-5 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-6a-methyl- (9CI) (CA INDEX NAME)

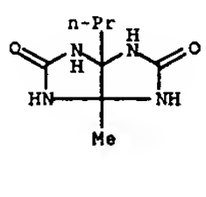


RN 28115-24-4 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-3a-methyl-6a-phenyl- (9CI) (CA INDEX NAME)

L5 ANSWER 22 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



RN 71443-52-2 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-3a-methyl-6a-propyl- (9CI) (CA INDEX NAME)



L5 ANSWER 23 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:154416 CAPLUS
DOCUMENT NUMBER: 88:154416
TITLE: Practically completely hydroxymethylated glycouril derivatives
INVENTOR(S): Parekh, Girish Girdhar
PATENT ASSIGNEE(S): American Cyanamid Co., USA
SOURCE: Ger. Offen., 25 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2740290	A1	19780309	DE 1977-2740290	19770907
DE 2740290	C2	19930318		
US 4105708	A	19780808	US 1976-721008	19760907
CA 1091236	A1	19801209	CA 1977-284287	19770808
GB 1603842	A	19811202	GB 1977-33815	19770811
NL 7709595	A	19780309	NL 1977-9595	19770831
BR 7705806	A	19780627	BR 1977-5806	19770831
BE 858428	A1	19780306	BE 1977-180690	19770906
FR 2363602	A1	19780331	FR 1977-26988	19770906
JP 53063487	A2	19780606	JP 1977-106876	19770907
JP 63063545	B4	19881207		

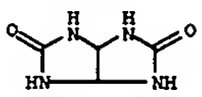
PRIORITY APPLN. INFO.: US 1976-721008 A 19760907

AB Glycoluril derivs. hydroxymethylated to a degree ≥3.70 and alkylated with MeOH and higher alcs. to degree 0.90-3.60 and 0.40-2.80, resp., are crosslinking agents for polymers. Thus, adding 284 parts glycoluril [496-46-8] (prepared from urea [57-13-6] and glyoxal [107-22-2]) slowly to 688 parts 44% HCHO [50-00-0] and 22 parts 0.5 N NaOH (pH 8.7) stirred at 40°, stirring 15 min, and adjusting the pH to 8.0 with 0.5N NaOH gives 483 parts tetrakis(hydroxymethyl)glycoluril (I) [5395-50-6]. Stirring I 262, MeOH 320, EtOH 460, and 70% HNO3 20 parts 20 min at 40°, cooling, and adjusting to pH 7-8 with 20° NaOH gives 320 parts 95-98.5% bis(ethoxymethyl)bis(methoxymethyl)glycoluril (II) [64157-13-7], Gardner-Holdt viscosity Z3-Z4, soluble in H2O and C6H6. Coating a mixture of 48% 15:55:30 acrylic acid-Bu acrylate-styrene polymer latex 490, II 103, TiO2 308, Me2NCH2CH2OH 8.2, p-MeC6H4SO3H 0.72, and H2O 45 parts on Zn phosphated steel and baking 20 min at 175° gives a 1.0-mil film with 60° gloss 92, Knoop hardness 14.4, pencil hardness H-2H, reverse impact strength 0-10 in.-lb, and MeCOEt resistance >200 cycles.

IT **496-46-8D**, butoxymethyl methoxymethyl derivs.
RL: MOA (Modifier or additive use); USES (Uses)
(crosslinking agents, for coatings)

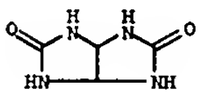
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

L5 ANSWER 23 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



IT **496-46-8**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with formaldehyde and alcs.)

RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 24 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1978:8662 CAPLUS
DOCUMENT NUMBER: 88:8662
TITLE: Polymer powder coating composition
INVENTOR(S): Parekh, Girish Girdhar
PATENT ASSIGNEE(S): American Cyanamid Co., USA
SOURCE: Ger. Offen., 21 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

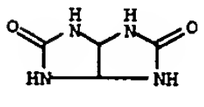
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2715036	A1	19771020	DE 1977-2715036	19770404
US 4118437	A	19781003	US 1976-674797	19760408
CA 1085989	A1	19800916	CA 1977-272643	19770225
GB 1563023	A	19800319	GB 1977-8426	19770228
NL 7703786	A	19771011	NL 1977-3786	19770406
FR 2347418	A1	19771104	FR 1977-10654	19770407
JP 52123428	A2	19771017	JP 1977-39599	19770408
JP 61016780	B4	19860502		

PRIORITY APPLN. INFO.: US 1976-674797 A 19760408

AB Coatings are manufactured from powder compns. containing carboxy and(or) hydroxy group-containing polymers, tetrakis(methoxymethyl)glycoluril (I) [17464-88-9] crosslinking agent and p-toluenesulfonic acid (II) [104-15-4] crosslinking catalyst, so that the powder compns. had softening point >55°. Thus, 240 parts 1.1:1 (mole ratio) neopentyl glycol-terephthalic acid copolymer [26590-78-3] was melted at 160°, mixed with 150 parts TiO2, mixed at 150° with 60 parts I and 0.5 parts II, cooled, milled, and pulverized to give a powder of particle size 120 μ, which was electrostatically sprayed on steel plate to give a solvent-resistant 28-38-μ-thick coating with pencil hardness H-3H and reverse-side impact strength 224 cm/kg.

IT **496-46-8P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and methylolation of)

RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 25 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:537274 CAPLUS
DOCUMENT NUMBER: 87:137274
TITLE: Finishing of textiles
INVENTOR(S): Masuda, Tsuyoshi; Kawanami, Eiji; Yamashita, Shogo; Sakamoto, Takeshi
PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

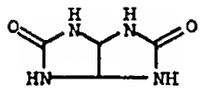
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 52063494	A2	19770525	JP 1975-135686	19751113

PRIORITY APPLN. INFO.: JP 1975-135686 A 19751113

AB Wash-resistant fabrics, with improved crease recovery, stiffness or resistance to shrinkage, were prepared by impregnating polyester-cotton, cotton, rayon, or nylon fabrics with an adduct of a triazinamine with **glyoxal** (I) [107-22-2] and a compound containing ≥2 CHO-reactive H groups followed by heat treatment. Thus, polyester-cotton blend was immersed in a solution of an adduct of I with melamine [108-78-1] and urea [57-13-6] to 70% pickup, dried, and heat-treated 3 min at 150° to give a fabric with wrinkle recovery angle (JIS L-1041; C method) 316° and 309° (after washing; JIS L-1042), compared with 234° and 193°, resp., for a fabric finished with a similar composition containing glyoxalmonourein.

IT **496-46-8D**, reaction products with **glyoxal** and triazinamines
RL: USES (Uses)
(finishes, for textiles)

RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

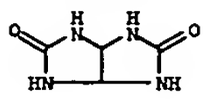


L5 ANSWER 26 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1977:75499 CAPLUS
DOCUMENT NUMBER: 86:75499
TITLE: Dinitroglycoluril-based explosives
INVENTOR(S): Bouleau, Jacques; Emeury, Jean M. L.; Kehren, Jean P. A. M.
PATENT ASSIGNEE(S): Societe Nationale des Poudres et Explosifs, Fr.
SOURCE: Ger. Offen., 7 pp. Division of Ger. Offen. 2,435,651.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2462330	A1	19761202	DE 1974-2462330	19740724
DE 2462330	B2	19770623		
FR 2238703	A1	19750221	FR 1973-27038	19730724
ZA 7404240	A	19750730	ZA 1974-4240	19740702
GB 1442259	A	19760714	GB 1974-29947	19740705
GB 1442260	A	19760714	GB 1975-43402	19740705
JP 50041888	A2	19750416	JP 1974-80833	19740716
JP 53035959	B4	19780929		
NL 7409779	A	19750128	NL 1974-9779	19740719
NL 171061	B	19820901		
NL 171061	C	19830201		
AU 7471476	A1	19760122	AU 1974-71476	19740722
SE 7409562	A	19750127	SE 1974-9562	19740723
SE 398108	B	19771205		
IT 1016675	A	19770620	IT 1974-69345	19740723
CA 1029729	A1	19780418	CA 1974-205498	19740723
BE 818045	A1	19750124	BE 1974-146903	19740724
SE 7708883	A	19770804	SE 1977-8883	19770804
SE 414923	B	19800825		
JP 53101512	A2	19780905	JP 1978-19954	19780224
JP 58018356	B4	19830412		

PRIORITY APPLN. INFO.: FR 1973-27038 A 19730724
AB The preparation of dinitroglycoluril (I) (55510-04-8) is described and some of its explosive properties compared to common explosives. It is prepared by reacting glyoxal [107-22-2], and urea [57-13-6] followed by nitration in fuming HNO3 containing 5-50 weight% N2O5 at -5 to 50°. The impact sensitivity of I is 0.5 kg m compared to 0.45 for hexogen and 0.52 for octogen.
IT **496-46-8P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and nitration of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

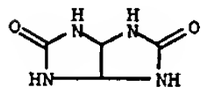
L5 ANSWER 26 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



L5 ANSWER 27 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1976:59464 CAPLUS
DOCUMENT NUMBER: 84:59464
TITLE: Glycoluril
INVENTOR(S): Shimizu, Toshio; Furuhashi, Susumu; Tanaka, Kyugo
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 50101379	A2	19750811	JP 1974-8958	19740122

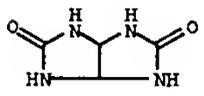
PRIORITY APPLN. INFO.: JP 1974-8958 A 19740122
AB Glycoluril (I) was prepared by adding aqueous (CHO)2 to aqueous urea at 50-110° in the presence of acid catalyst. Thus, 145 g 40% aqueous (CHO)2 was added to 150 g urea in H2O (adjusted at pH 1.0 with concentrated H2SO4) to give 91.6% I.
IT **496-46-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 28 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1972:461995 CAPLUS
DOCUMENT NUMBER: 77:61995
TITLE: Hydantoin and (indolylmethyl)hydantoin
INVENTOR(S): Baumgartner, Pierre; Roux-Guerraz, Claude
PATENT ASSIGNEE(S): Institut Francais du Petrole, des Carburants et Lubrifiants; Entreprise de Recherches et d'Activites Petrolieres (ELF)
SOURCE: Fr., 8 pp.
CODEN: FRXXAK
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2079849		19711217	FR 1970-5342	19700213

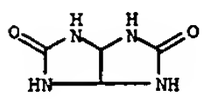
GI For diagram(s), see printed CA Issue.
AB Hydantoin and 4-(3-indolylmethyl)hydantoin (I) were prepared by condensation of urea with glyoxal and hydrolysis, or condensation of indole-3-aldehyde with hydantoin and hydrogenation, resp.
IT **496-46-8P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 29 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1971:463785 CAPLUS
DOCUMENT NUMBER: 75:63785
TITLE: Glycoluril
INVENTOR(S): Takahashi, Tatsu; Sasaki, Nobuo; Kawamura, Toru
PATENT ASSIGNEE(S): Mitsui Toatsu Chemicals Co., Ltd.
SOURCE: Jpn. Tokkyo Koho, 2 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 46021397	B4	19710617	JP	19681114

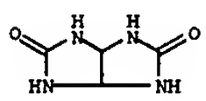
AB AcH is oxidized with HNO3, then the concentration of organic acid in the reaction solution is adjusted to 5-40 molar % to the concentration of glyoxal in said reaction solution, and the mixture treated with urea at 60-80° to give 68% glycoluril.
IT 496-46-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 30 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1969:492921 CAPLUS
DOCUMENT NUMBER: 71:92921
TITLE: Modified starch
PATENT ASSIGNEE(S): Nobel-Bozel
SOURCE: Fr., 4 pp.
CODEN: FRXXAK
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

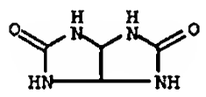
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1542721		19681018	FR	19670906

AB Starch is oxidized with di- or tetrachloroglycoluril in Na2CO3 at pH 8-9 and 41°. The excess of Cl is removed with Na2S2O3. The modified starch shows no retrogradation, is very reactive towards glyoxal, and gives excellent films.
IT 26248-98-6 26248-99-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation by, of starch)
RN 26248-98-6 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, dichlorotetrahydro- (9CI) (CA INDEX NAME)



2 (D1—Cl)

RN 26248-99-7 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrachlorotetrahydro- (9CI) (CA INDEX NAME)



4 (D1—Cl)

L5 ANSWER 31 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1968:70119 CAPLUS
DOCUMENT NUMBER: 68:70119
TITLE: Vat dyeing with ethyleneurea-formaldehyde type resin treatment
INVENTOR(S): Olaj, Oskar F.; Berger, Alfred; Maeder, Arthur; Schaefer, Paul
PATENT ASSIGNEE(S): CIBA Ltd.
SOURCE: U.S., 2 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

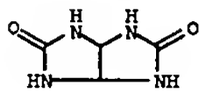
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3326628		19670620	US	19630621

AB The title process resulting in level dyeing of fibers and good dye exhaustion is carried out in an aqueous dye bath in the presence of water-soluble condensates prepared by treating ethyleneurea (I) with a monoaldehyde selected from HCHO (II), AcH (III), and acrolein (IV) and 1 of either urea (V), acetylenediurea (VI), or dicyandiamide (VII). Thus, 86 g. I and 2.8 g. VI were dispersed in 500 ml. water, mixed with 5 ml. 2N HCl, heated to 80° and then cooled to 30-5°. To the solution, was added 31.2 g. 37% II, the mixture stirred 1 hr. and then heated 30 min. at 40-5°. The reaction mixture was neutralized with .apprx.10 ml. NaOH solution, heated, and while still hot freed by filtration from a small amount of undissolved material to yield a solution, containing 17% of the condensation product. The I was also treated with the following combinations of reactants: II, V; III, V; III, VII; II, glyoxal; II, diethylenetriamine-HCl; and also II, IV, and V. A dyebath was prepared which contained per l. 16 ml. 30% NaOH, 1 g. Na2S2O4, 1 of the above prepared condensation products, and a vat dye obtained from molten S and methylbenzanthrone. At intervals of 10 min., at a bath temperature of 60-5°, 2 pieces of cotton satin were immersed and moved about in the dyebath. The goods liquor ratio was 1:80. After another 50 min., the pieces of satin were removed from the dyebath and the vat dyeing developed in the usual manner. The pieces of satin were dried, ironed, and then measured for brightness. The results showed that the additives provided good dye leveling.
IT 30112-85-7
RL: USES (Uses)
(dyeing with vat dyes with leveling agent of)
RN 30112-85-7 CAPLUS
CN Formaldehyde, polymer with 2-imidazolidinone and tetrahydroimidazo[4,5-d]imidazole-2,5(1H,3H)-dione (9CI) (CA INDEX NAME)

CM 1

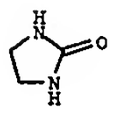
CRN 496-46-8
CMF C4 H6 N4 O2

L5 ANSWER 31 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



CM 2

CRN 120-93-4
CMF C3 H6 N2 O

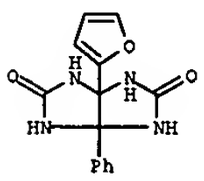


CM 3

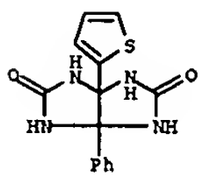
CRN 50-00-0
CMF C H2 O

$H_2C{=}O$

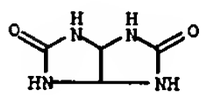
L5 ANSWER 32 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1966:482228 CAPLUS
DOCUMENT NUMBER: 65:82228
ORIGINAL REFERENCE NO.: 65:15365a-d
TITLE: 5,5-Disubstituted hydantoins and 5-selenohydantoins
AUTHOR(S): Bergmann, P.; Pragst, F.; Paul, H.
CORPORATE SOURCE: Humboldt-Univ., Berlin
SOURCE: Arch. Pharm. (1966), 299(6), 499-503
DOCUMENT TYPE: Journal
LANGUAGE: German
GI For diagram(s), see printed CA Issue.
AB To 0.5 g. Na in 50 ml. EtOH was added under argon 2.1 g. benzil and 1.23 g. selenourea and the mixture heated 2 hrs. EtOH was distilled, the residue taken up in 250 ml. H2O and made weakly acid with CO2 to yield as precipitate, 65% 5,5-diphenyl-2-selenohydantoin (I), m. 212° (PrOH). Similarly, 2.16 g. phenylthienyl glyoxal (IIa) was condensed with 1.23 g. selenourea to give 50% 5-phenyl-5-(2-thienyl)-2-selenohydantoin (II), m. 204-5° (PrOH). I (0.3 g.) was treated with 20 drops Me2SO4 and 5 ml. 5% NaOH to give 1-methyl-2-methylseleno-4,4-diphenyl-5-imidazolinone (III), m. 154-6°. Similarly, II gave 1-methyl-2-methylseleno-4-(2-thienyl)-4-phenyl-5-imidazolinone (IV), m. 121°. Phenyl-2'-furylglyoxal (Va) (4 g.) (prepared from benzfuroin, cupric acetate and NH4NO3), in a solution of 1 g. Na in 70 ml. EtOH and 0.025 mole urea was refluxed 2 hrs. After removing EtOH, and treating with 200 ml. H2O, the brown precipitate gave 29% 3a-(2-furyl)-6a-phenylglycoluril (V), m. 315° (decomposition) (AcOH). The alkaline aqueous solution was neutralized with CO2 and the dark precipitate extracted thrice with 30 ml. Et2O. Working up the exts. gave 6% 5-phenyl-5-(2-furyl)hydantoin, m. 216-17°. Similarly, 2.2 g. IIa and 1 g. urea in a mixture of 6 ml. concentrated KOH and 50 ml. 96% EtOH gave 10% 3a-(2-thienyl)-6a-phenylglycoluril (VI), m. 328° (decomposition) (AcOH). Neutralization of the aqueous solution and work-up gave 35% 5-phenyl-5-(2-thienyl)hydantoin, m. 252-3° (EtOH). Va (4 g.) treated with 1.8 g. urea gave 25% 5-(2-furyl)-5-phenyl-2-thiohydantoin, m. 196-7° (PrOH). Similarly, 2.2 g. IIa with 1.2 g. urea gave 34% 5-(2-thienyl)-5-phenyl-2-thiohydantoin, m. 203-4° (PrOH).
IT **7772-35-2**, Glycoluril, 3a-(2-furyl)-6a-phenyl- **10013-23-7**, Glycoluril, 3a-phenyl-6a-(2-thienyl)-
(preparation of)
RN 7772-35-2 CAPLUS
CN Glycoluril, 3a-(2-furyl)-6a-phenyl- (7CI, 8CI) (CA INDEX NAME)



L5 ANSWER 32 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
RN 10013-23-7 CAPLUS
CN Glycoluril, 3a-phenyl-6a-(2-thienyl)- (7CI, 8CI) (CA INDEX NAME)



L5 ANSWER 33 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1966:440016 CAPLUS
DOCUMENT NUMBER: 65:40016
ORIGINAL REFERENCE NO.: 65:7509a-b
TITLE: Photochemistry of 5-bromouracil in aqueous solution
AUTHOR(S): Ishihara, Hiroshi; Wang, Shih Yi
CORPORATE SOURCE: Johns Hopkins Univ., Baltimore, MD
SOURCE: Biochemistry (Moscow, Russian Federation) (1966), 5(7), 2307-13
CODEN: BIORAK; ISSN: 0006-2979
DOCUMENT TYPE: Journal
LANGUAGE: English
AB 5,5'Diuracil (I), uracil, glyoxaldiurene, barbituric acid, oxalic acid, isoorotic acid, parabanic acid, urea, NH3, and **glyoxal** formed by the uv irradiation (mainly 254 mμ) of 5-bromouracil in aqueous solution were quant. isolated and identified. The photochem. process is, therefore, a free radical reaction, and both I and uracil are formed through the uracil radicals as in the case of photolysis of 5-bromo- 1,3-dimethyluracil, but their secondary products are different. I-type of coupled products may be of importance in radiation and photobiology.
IT **496-46-8**, Glycoluril
(preparation of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

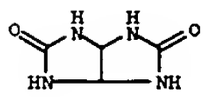


L5 ANSWER 34 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1964:53162 CAPLUS
DOCUMENT NUMBER: 60:53162
ORIGINAL REFERENCE NO.: 60:9391h,9392a-f
TITLE: Water-soluble dyes containing methylene ether radicals
INVENTOR(S): Braun, Willy; Weissauer, Hermann
PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik A.-G.
SOURCE: 18 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
PATENT INFORMATION:

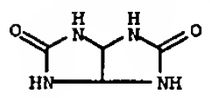
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 942566		19631127	GB	
PRIORITY APPLN. INFO.:			DE	19590919

GI For diagram(s), see printed CA Issue.
AB H2O-soluble azo and anthraquinone dyes containing radicals with replaceable H atoms attached to N react with H2CO and MeOH, thereby replacing these H atoms with CH2OMe groups, giving dyes for cotton and other textiles. Thus, 2-(3-aminophenyl)-4,6-diamino-s-triazine (I) → 1-(2,6-dichloro-4-sulfophenyl)-3-methyl-5-pyrazolone 58 and 30% H2CO 50 in H2O 100 parts brought to pH 9 with Na2CO3 was boiled 20 min. After cooling, 10% HCl was added to pH 7.5, the product precipitated with NaCl, filtered, washed with dilute aqueous NaCl, and vacuum-dried at 40°. The methylol compound 35 was stirred 10 min. with MeOH 100 and concentrated HCl 5, the mixture neutralized with Na2CO3 8, the MeOH vacuum-distilled, and saturated aqueous NaCl 200 parts added. The precipitate, filtered and vacuum-dried at 40°, dyed cotton greenish yellow. Similarly, other dyes were prepared and their CH2OMe derivs. formed as above (reactants and color on cotton given): PhNH2 → [1,8,3,6-H2N(HO)C10H4(SO3H)2, 2-chloro-4,6-diamino-s-triazine (II)] (III), bluish red (the same dye was prepared by methylolating and etherifying III before coupling with diazotized PhNH2); IV (R = 4-H2NC6H4) (V) → 1,4-HOC10H6SO3H, red; IV [R = 4,3-H2N(HO3S)C6H3] → 1-(3-sulfophenyl)-3-carbamoyl-5-pyrazolone (VI), yellow; 2-H2NC6H4CO2H → IV [R = 8,6,2-HO(HO3S)C10H5] (VII), orange-red; 1-amino-4-(ureido anilino)-2-anthraquinonesulfonic acid, **glyoxal** monoureine di-Me ether (VIII), blue; II, 1-(3-amino- 4-sulfoanilino)-4-amino-3-anthraquinonesulfonic acid, blue; 2-(4-aminophenylsulfonamido)-4,6-diamino-s-triazine (IX) → 1,3,6-HOC10H5(SO3H)2, orange-red; 1-amino-4-bromo-2-anthraquinonesulfonic acid (X), IX, reddish blue; 1,4-bis(4-ureido-2-sulfoanilino)anthraquinone (XI) (di-Na salt), green; I, X (Na salt), blue; 4-H2NC6H4SO2NH2 (XII) → VI, yellow; 4-H2NC6H4SO3H → IV (R = 4-HOC6H4) (XIII), yellow; 2,4-HO(O2N)C6H3NH2 → XIII, brown; 2,6,8-H2N(HO3S)2C10H5 → 3-MeC6H4NH2, II, reddish yellow; [2,5-(H2N)2C6H3SO3H, II] → 2-C10H7OH (XIV), red; [2,4-(H2N)2C6H3SO3H, II] → XIV, orange-red; PhNH2 → [II, 2,5,7-H2N(HO)C10H5SO3H], orange-red; XII → 5,2,7-HO(H2NCONH)C10H5SO3H, red; 2-H2NC6H4SO3H (XV) → 2,6-HOC10H6SO3H, orange-red; XV → 2-(2-hydroxybenzylideneamino)-4,6-diamino-s-triazine (XVI), reddish yellow. Preparation of intermediates: VIII 0.9 was dissolved at 85° with stirring in a solution of 4-AcNHC6H4NHCONH2 1 in 3% AcOH 30, concentrated HCl 0.6 part added, and the mixture kept at 85° for 20 min., cooled and the precipitated IV (R = AcNHC6H4) (XVII) filtered and washed with H2O (yield 1.2 parts IV). XVII 1 was added at 90-5° with stirring to 4% aqueous NaOH 50 parts, held 45

L5 ANSWER 34 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)
min. at 90°, clarified, held 12 h. at room temp., and the pptd. V filtered and washed, (yield 0.5 part). 2,8,6-(H2NCONH)(HO)C10H5SO3H 1 was heated 1 h. in H2O with VIII and 7% HCl to give 0.6 part VII. Melamine (XVIII) and 4-O2NC6H4SO2Cl were heated at 60-70° in pyridine, and the resulting nitro compd. reduced to IX. Leuco 1,4-diaminoanthraquinone was treated with p-C6H4(NH2)2, the product sulfonated, and its aq. soln. heated with NaOCN to give XI. Glyoxalmonoureine was added at 80-5° to 4-HOC6H4NHCONH2 in 10% aq. EtOH, then 18% HCl was added and the mixt. stirred 15 min. and cooled to ppt. XIII. A mixt. of XVIII, 2-HOC6H4CHO, and N-methylpyrrolidinone was heated at 160° until the product sepd. completely, and then added to MeOH to give XVI.
IT 496-46-8, Glycoluril
(derivs.)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

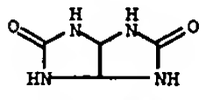


L5 ANSWER 35 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)



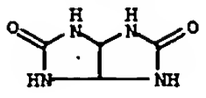
L5 ANSWER 35 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1963:469118 CAPLUS
DOCUMENT NUMBER: 59:69118
ORIGINAL REFERENCE NO.: 59:12786b-f
TITLE: Imidazoimidazoles. I. Reaction of ureas with glyoxal. Tetrahydroimidazo[4,5-d]imidazole-2,5-diones
AUTHOR(S): Nematollahi, Jay; Ketcham, Roger
CORPORATE SOURCE: Univ. of California Med. Center, San Francisco
SOURCE: Journal of Organic Chemistry (1963), 28(9), 2378-80
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
GI For diagram(s), see printed CA Issue.
AB To 71 g. tetrahydroimidazo[4,5-d]imidazole-2,5-dione [ν (all in KBr) 1680, 3200 cm.-1, nuclear magnetic resonance (all in CF3CO2H) δ5.45] in 800 ml. 13% NaOH was added dropwise 100 ml. Me2SO4 at 90-5°; the whole kept 0.25 hr. at 90-95°, 80 g. NaOH added, then 100 ml. Me2SO4, the process repeated, the whole concentrated, and the residue continuously with C6H6 gave 20 g. 1,3,4,6-tetramethyltetrahydroimidazo[4,5-d]imidazole-2,5-dione (I), m. 225-7° (dioxane), ν 1715 cm.-1, δ 4.98, 2.73; alternately, to 0.725 g. 80% (CHO)2 in 100 ml. MeOH and 0.5 ml. concentrated HCl was added 1.8 g. (MeNH2)CO in 100 ml. MeOH; the whole heated 0.5 hr. at 100° gave 1.2 g. I. I has a dipole moment of 4.05 D., which indicated a cis configuration. The second procedure above was used with MeNHCONH2 to give 62% of a mixture of 1,4-dimethyltetrahydroimidazo[4,5-d] imidazole-2,5-dione, m. 298-300° (H2O), ν 1685, 3250 cm.-1, δ 2.75, 5.41, 5.09 and the more soluble 1,6-dimethyl derivative, m. 268-70° (dioxane-absolute EtOH), ν 1705, 3200 cm.-1, δ 2.58, 5.25; with PhNHCONH2 the procedure gave 22% 1,4-diphenyltetrahydroimidazo[4,5-d] imidazole-2,5-dione (II), m. 375-80° (cyclohexanone), ν 1710 cm.-1, δ 5.72, 7.03, and 17% 1-phenylhydantoin, ν 1725, 3210 cm.-1, δ 7.05, 4.13; with PhNHCONHMe the procedure gave 23% soluble 1-phenyl-3-methylhydantoin, m. 182-4° (MeOH) and an insol. solid separated by chromatography on Florisil and elution with CH2Cl2-C6H6 (1:1) containing 1% MeOH, to give first 1,4-dimethyl-3,6-diphenyltetrahydroimidazo[4,5-d]imidazole-2,5-dione (III), ν 1700 cm.-1, δ 2.81, 6.62, 5.17, 6.05, and then 1,6-dimethyl-3,4-diphenyltetrahydroimidazo[4,5-d]imidazole-2,5-dione (no physical properties given). To 5.5 g. II, 5 g. NaOH, and 150 ml. N-methylpyrrolidone at 120-150° was added 10 ml. Me2SO4, followed by 2 successive treatments with 3 g. NaOH and 10 ml. Me2SO4, as above to give 23% III, m. 260-5°, ν 1695 cm.-1, δ 5.65, 2.30, 7.05. 1,3-(PhNH)2CO, 10.6 g., 3.6 g. (CHO)2, 10 ml. concentrated HCl and 400 ml. 95% EtOH refluxed 60 hrs. gave 71%, 1,3-diphenylhydantoin, m. 134-6°, ν 1710, 1775 cm., δ 7.06, 4.27.
IT 496-46-8, Glycoluril
(derivs.)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)

L5 ANSWER 36 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1960:97145 CAPLUS
DOCUMENT NUMBER: 54:97145
ORIGINAL REFERENCE NO.: 54:18350f-i
TITLE: Halogenation of glycoluril and diureidopentane
AUTHOR(S): Slezak, Frank B.; Hirsch, Alfred; Rosen, Irving
CORPORATE SOURCE: Diamond Alkali Co., Painesville, O.
SOURCE: Journal of Organic Chemistry (1960), 25, 660-1
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
OTHER SOURCE(S): CASREACT 54:97145
AB Glyoxal (2250 g., 30%) and 1900 g. CO(NH2)2 in 4 l. H2O heated 20-30 min. to 85-95°, while concentrated HCl was added as needed to maintain the solution at pH 1.5-2.0, the whole cooled, the precipitate filtered off, and recrystd. gave 850-900 g. glycoluril (I), decomposition at 300° (H2O). I (71 g.) in 3200 ml. H2O treated with 150 g. Cl at the rate of 20-40 g./hr. while 6N NaOH was added to maintain the mixture at pH 7-8, and the solid collected and dried gave 136 g. tetrachloroglycoluril (II), decomposing above 280°. Dichloroglycoluril was treated as in the preparation for II except that 78 g. Cl was used, the solution filtered to remove traces of II, evaporated, and the solid collected to give 90 g. product, m. with decomposition at 180°. I (7.1 g.) in 2200 ml. H2O treated during 3 hrs. with 80 g. Br while the mixture was maintained at pH 9-10 gave 17.2 g. tetrabromoglycoluril, m. 292-5° (decomposition). Diureidopentane (56 g.) in 3 l. H2O treated during 4 hrs. with 110 g. Cl at pH 5-8 gave 87 g. tetrachlorodiureidopentane, m. 210° (decomposition). Dry samples of the products kept well but mixts. with wet, strongly alkaline materials decomposed rapidly.
IT 496-46-8, Glycoluril
(halogenation of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



IT 26248-98-6, Glycoluril, dichloro-
(preparation of)
RN 26248-98-6 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, dichlorotetrahydro- (9CI) (CA INDEX NAME)

L5 ANSWER 36 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

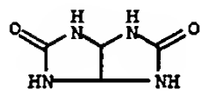


2 (D1-C1)

L5 ANSWER 37 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1956:74232 CAPLUS
DOCUMENT NUMBER: 50:74232
ORIGINAL REFERENCE NO.: 50:13999h-i
TITLE: 4,5-Dihydroxy-2-imidazolidinone
INVENTOR(S): Reibnitz, Bruno v.
PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik Akt.-Ges.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2731472		19560117	US	

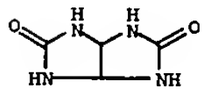
AB Glyoxal (32% solution from HNO3 oxidation of AcH) 100, Na2CO3 7.5, and urea 5 cooled to 0° during 12 hrs. formed 4,5-dihydroxy-2-imidazolidinone (I) 25 parts. Evaporation of the mother liquor in vacuo at 35° gives 15 parts more. The filtrate diluted, brought to pH 2-3, urea 25 added, and the mixture heated to 95-7° ppts. glycoluril 25 parts.
IT 496-46-8, Glycoluril
(manufacture of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 38 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1956:32235 CAPLUS
DOCUMENT NUMBER: 50:32235
ORIGINAL REFERENCE NO.: 50:6505a-b
TITLE: Solidification of urea melts
INVENTOR(S): Michelitsch, Walter; Geisel, Wilhelm
PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik Akt.-Ges.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2712557		19550705	US	

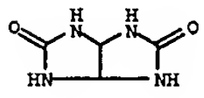
AB A glyoxal-urea condensation product, glycoluril (I) or its tetrakis(hydroxymethyl) derivative and HCHO is added to urea-melts containing a small amount of water. For example, a melt containing 0.2% I and 99.8% urea was sprayed by means of a stream of 3000 cu. m. air/cu. m. urea/hr. The urea thus obtained consisted of particles, 85% of which were smooth and spherical, that stored more loosely than urea produced in the usual way. Cf. C.A. 47, 147d.
IT 496-46-8, Glycoluril
(effect on urea storage)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 39 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1955:84520 CAPLUS
DOCUMENT NUMBER: 49:84520
ORIGINAL REFERENCE NO.: 49:15976d-e
TITLE: Ureines of glyoxal
PATENT ASSIGNEE(S): Badische Anilin- & Soda-Fabrik (I. G. Farbenindustrie Akt.-Ges. "In Auflosung")
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 717287		19541027	GB	

GI For diagram(s), see printed CA Issue.
AB To 100 parts of a 32% glyoxal solution, obtained by oxidation of AcH with HNO3 and subsequent evaporation in vacuo and which has an acid value of 80 (80 mg. of KOH per g. solution) is added 715 parts of calcined soda in portions. When evolution of CO2 has ended, the solution has a pH of 7. Urea 50 parts is stirred in, the temperature rising to 35-40° in 0.5 hr., the solution stirred 12 hrs., cooled gradually to 0°, and the crystalline monoureine, HOCH.NH.CO.NH.CHOH, of glyoxal (25 parts) filtered off. A further 15 parts of monoureine can be recovered by evaporation in vacuo to approx. 0.5 volume at 35°; the total yield of monoureine is 61%. The filtrate is diluted 1-2 with H2O and acidified to pH 2 to 3 with HCl. Another 25 parts of urea are added and the mixture heated to 95-7°; approx. 25 parts of glyoxaldiureine sep. as a fine crystalline precipitate and are filtered off.
IT 496-46-8, Glycoluril
(manufacture of)
RN 496-46-8 CAPLUS
CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 40 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1953:20687 CAPLUS
DOCUMENT NUMBER: 47:20687
ORIGINAL REFERENCE NO.: 47:3566f-i
TITLE: High wet-strength paper
INVENTOR(S): Kamlet, Jonas
PATENT ASSIGNEE(S): Mathieson Chemical Corp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

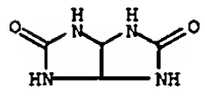
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2624686		19530106	US	

AB Paper having a high tensile strength while wet with H2O, high H2O absorptivity, and good resistance to oil, grease, and soap, suitable for the manufacture of towelling, facial tissues, toilet paper, handkerchiefs, napkins, bags, containers, sanitary objects, diapers, dress shields, maps, and other documents subject to rough usage, is produced by incorporating within the paper 0.5-10.0% (based on bone-dry weight of paper) a monomer, such as the reaction product of tetrahydroimidaz(d)imidazole-2,5(1H,3H)-dione, or other products formed by the condensation of urea with glyoxal or its derivs. and an aldehyde. The monomer is mixed in aqueous solution with an acid catalyst prior to application to the paper sheet, applied to the sheet, adjusted to monomer content, dried, and cured. Thus, a mixture of 195 kg. of 30% glyoxal solution and 120 kg. urea is heated with stirring for 20 min. at 95-100° and treated with 343 kg. of 35% HCHO solution and 14 kg. Ca(OH)2 slurried in 50 l. H2O. The mixture is heated and stirred at 35-45° until the odor of HCHO has almost disappeared. The pH is adjusted to 7 with 25% H2SO4, the CaSO4 is filtered, and the filtrate is concentrated under reduced pressure below 60° to a sirup containing 520 kg. of 50% solution of 1,3,4,6-tetrakis(hydroxymethyl)tetrahydroimidaz(d)imidazole-2,5(1H,3H)-dione. The use of tech. 30% glyoxal solution instead of the 35% HCHO gives 1,3,4,6-tetrakis(formylhydroxymethyl)tetrahydromethylimidaz(d)imidazole-2,5(1H,3H)-dione. A sheet of dry paper intended for towelling is sprayed with a freshly prepared solution of the above monomer and H2SO4 so as to contain 6% of 50% resin solution and 0.10% acid. The paper is dried below 150°F. and then heated for 30 sec. at 275-300°F. Modifications of the process and products are discussed.

IT **496-46-8**, Glycoluril
(and derivs., in paper wet-strengthening)

RN 496-46-8 CAPLUS

CN Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro- (9CI) (CA INDEX NAME)



L5 ANSWER 40 OF 40 CAPLUS COPYRIGHT 2005 ACS on STN (Continued)

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